FlyBy Math^{TM} Alignment
Indiana's Academic Standards - Mathematics

Standard 3. Relations and Functions	
Students sketch and interpret graphs representing given situations. They understand the concept of a function and analyze the graphs of functions.	
A1.3.1 Sketch a reasonable graph for a given relationship.	--Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes. --Interpret the slope of a line in the context of a distance-rate-time problem.
A1.3.2 Interpret a graph representing a given situation.	--Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations and a Cartesian coordinate system. --Interpret the slope of a line in the context of a distance-rate-time problem.

Standard 4. Graphing Linear Equations and Inequalities	
Students graph linear equations and inequalities in two variables. They write equations of lines and find and use the slope and y-intercept of lines. They use linear equations to model real data.	
Indicator A1.4.1 Graph a linear equation.	*FlyBy Math*^{TM} **Activities** --Represent distance, speed, and time relationship for constant speed cases using linear equations and a Cartesian coordinate system.
A1.4.2 Find the slope, x-intercept, and y-intercept of a line given its graph, its equation, or two points on the line.	--Represent distance, speed, and time relationship for constant speed cases using linear equations and a Cartesian coordinate system. --Interpret the slope of a line in the context of a distance-rate-time problem.
A1.4.3 Write the equation of a line in slope-intercept form. Understand how the slope and y-intercept of the graph are related to the equation.	--Interpret the slope of a line in the context of a distance-rate-time problem.
A1.4.5 Write the equation of a line that models a data set and use the equation (or the graph of the equation) to make predictions. Describe the slope of the line in terms of the data, recognizing that the slope is the rate of change.	--Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes. --Interpret the slope of a line in the context of a distance-rate-time problem. --Predict outcomes and explain results of mathematical models and experiments.

Standard 5. Pairs of Linear Equations and Inequalities

Students solve pairs of linear equations using graphs and using algebra. They solve pairs of linear inequalities using graphs. They solve word problems involving pairs of linear equations.

Indicator	FlyBy Math^{TM} Activities
A1.5.6 Use pairs of linear equations to solve word problems.	--Represent distance, speed, and time relationship for constant speed cases using linear equations and a Cartesian coordinate system. --Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

Standard 9. Mathematical Reasoning and Problem Solving

Students use a variety of strategies to solve problems.

Indicator	FlyBy Math^{TM} Activities
A1.9.1 Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guess-and-check, solving a simpler problem, writing an equation, and working backwards.	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. --Conduct a simulation of each airplane scenario.
A1.9.2 Decide whether a solution is reasonable in the context of the original situation.	--Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation.